

THE UNIVERSITY OF KANSAS SCIENCE BULLETIN

VOL. XXXIII, PT. I]

APRIL 20, 1949

[No. 5

Two New Teiid Lizards from Costa Rica

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ABSTRACT.—Two species of lizards belonging to the Family Teiidae are described as new. One species, *Alopoglossus plicatus*, is the first record of that genus on the North American continent. The second species, *Leposoma bisecta*, is the second species of that genus known north of the Isthmus of Panamá.

The lizard family TEIIDAE, which apparently has undergone the greater part of its evolution in South America, is represented there by about 28 known genera, a number greater than is possessed by any other South American lacertilian family at the present time. Eight genera have entered the isthmus and have pushed various distances to the north. These are *Cnemidophorus*, a genus widespread in Central America, Mexico and the United States; *Ameiva*, a genus with several representatives in Central America and Mexico extending far to the north in eastern Mexico; a third, *Gymnophthalmus*, reaching at least to the isthmus of Tehuantepec; *Leposoma* and *Anadia*, known to have reached as far north as Costa Rica, and *Echinosaurus* and *Ptychoglossus* known in Panamá.

A species encountered in the east slope drainage of Costa Rica at an elevation of about 2,600 feet is referred to the genus *Alopoglossus* and is here described as new. There may be some doubt about the use of *Alopoglossus* for those lizards having chevron-shaped plicae on the tongue instead of scales; Boulenger recognized the genus *Alopoglossus* for these forms, but Burt and Burt (1931) synonymized it with *Pantodactylus* Duméril and Bibron. The differences apparently are of generic significance.

Alopoglossus plicatus sp. nov.

Figure 1.

Type: University of Kansas Museum of Natural History, no. 23800. Taken on the Morehead Finca, 5 miles southwest of Turrialba, Costa Rica, July 21, 1947, by Edward H. Taylor.*

Diagnosis: Dorsal scales around body forming nearly regular transverse and oblique keeled series; 30 scales from occiput to base of tail; 24 scales from chinshields to anals; 33-35 scales around body at middle, all strongly keeled save on belly; keels terminating in spines, the spine reduced or absent on lateral rows; ventrals in four regular, longitudinal, smooth, quadrangular rows, outer larger than inner; gular collar indicated; four supraoculars; venter cream with dark spots or flecks in males (female may be white below).

Description of the type: Rostral nearly twice as wide as high forming a straight (or very slightly curved) suture with the frontonasal; latter large, in contact laterally only with nasal; prefrontals pentagonal, touching only preocular and first supraocular laterally; frontal wider near anterior end than at posterior end, sides slightly concave, ends broadly angular, in contact with three supraoculars; two frontoparietals, larger than prefrontals but at least one fourth smaller than frontal; parietals large, longer than wide, much larger than other head scales, angular at anterior end, somewhat rounded posteriorly, and separated from each other by a large parallel-sided interparietal.

Nasal large, triangular, at least partially divided by a suture running up from nostril; a rectangular preocular much higher than wide; four supraoculars, four superciliaries, anterior largest; 2 rows of ciliaries on upper eyelid; lower eyelid with a more or less transparent disk divided into three parts; 2 presuboculars precede an elongate curved subocular; 3 presuboculars, the upper touching the anterior superciliary; a small "loreal."

Seven upper labials, third greatly elongated, lying for the most part below eye; mental deeper and wider than rostral; six lower labials; large azygous postmental followed by three pairs of chinshields, first and second pairs in contact mesially and in contact with labials laterally, third pair separated mesially from each other and from labials laterally, followed by an enlarged pair of scales separated mesially; six transverse rows of smooth scales between

* The University of Kansas Natural History Museum wishes to acknowledge financial aid to the Endowment Association of the University of Kansas, in the making of collections in Costa Rica.

this last pair of scales and the groove formed by gular collar; six rows of temporal scales, posterior scale of upper row largest, somewhat ridged; some slight ridges on some of the other temporal scales; auricular opening large.

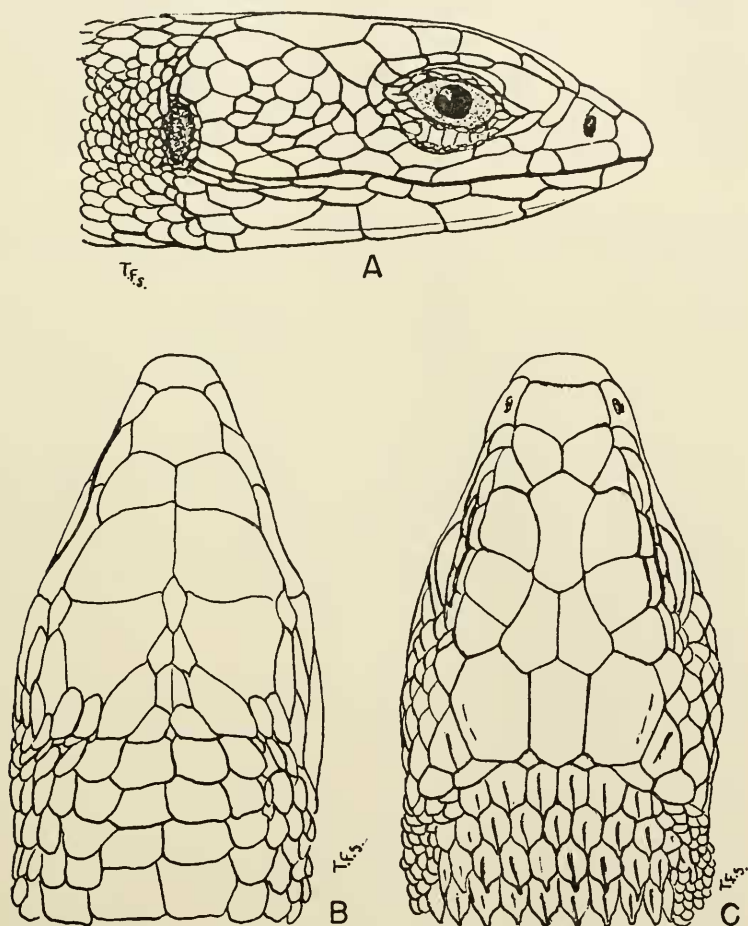


FIG. 1. *Alopoglossus plicatus* sp. nov. Univ. Kansas Nat. Hist. Mus. no. 23800 Type. Five miles southwest Turrialba, Costa Rica. A. Head lateral view. B. Head ventral view. C. Head dorsal view. (Slightly diagrammatic.) Snout to ear length 11.6 mm.

Dorsal scales strongly keeled, their sides more or less parallel, terminating in a spine, continuing to tip of tail; scales forming transverse rows. Lateral scales on neck small, smooth, irregular in size; around arm insertion a rather large granular area present, and a similar one of lesser extent about leg insertion.

Ventral scales of breast and abdomen large, quadrangular, smooth, beginning at collar where scales are slightly curved, and continuing back to level of thigh, arranged in four longitudinal rows and sixteen transverse rows, the outer larger than inner; outer row on each side bordered by a series of somewhat enlarged scales about one half as wide; scales under tail smooth; four elongate anal scales, outer smaller than inner, separated from the last modified row of the abdominal series by a row of small scales, two on each side, bearing femoral pores; total series of femoral and preanal pores 12 (13) on each side.

Arms and legs moderately developed, pentadactyl; digits well developed and clawed; anterior surface of arm with large, smooth, irregularly-shaped scales; those on back and ventral surface much smaller; front scales on thigh smooth and large; dorsal scales on thigh smaller, strongly keeled; posterior thigh surface covered with granular scales; under surface of tibia with large smooth scales; those on other surfaces smaller, keeled; two enlarged scales, each with a sharp cutting edge, at base of first finger.

Each side of tongue decorated with a regular series of plicae that run forward to medial line, forming 24 chevrons; posteriorly there are eight or nine rows on each side that fail to meet in the middle.

Measurements (in mm.): Snout to vent, 50; snout to arm, 19.2; axilla to groin, 25; head width, 8.4; snout to ear, 11.6; tail, 60 (regenerated); arm, 13; leg, 19.5.

Color in life: Head nearly uniform mahogany brown, slightly darker in supraorbital region; back slightly reddish-brown with numerous dark flecks; a dorsolateral light line from above tympanum to behind level of arm insertion; sides blackish, but with very numerous cream-white flecks, some suggesting lines; venter cream with numerous black spots or flecks; black marks on the ventral scales are largely on scale edges and these, being contiguous, tend to form irregular black stripes. Chin with rounded dark spots.

Tail partly regenerated, proximal part colored much like body; ventrally, dark spotting tends to form transverse rows of dots or narrow irregular bars; regenerated portion of tail much lighter with a reddish cast; only a few minute dark flecks on sides and a very few on underside. There is somewhat more black mixed in dorsal coloration of body in area between the two anterior dorsal light lines, this area being considerably darker than elsewhere.

Relationship: This species is probably most closely related to

Alopoglossus buckleyi. From the species which Boulenger placed in this genus, *A. plicatus* may be distinguished as follows:

From *Alopoglossus copii* by the presence of quadrangular scales on the neck, rather than the more typical lanceolate triangular, spine tipped scales of *copii*. There are, of course, other differences including a longer series of femoral pores.

From *carinicaudata* it differs in having 33 - 35 instead of 21 scales round the body; and from *buckleyi* in having smooth instead of keeled scales, more scales around body, and a very different coloration.

Variation: The paratype, a young female from the same locality, differs somewhat from the type, but I suspect that this is due largely to age and sex. The lateral groove on the tail is very distinct, and that on the dorsal surface of the tail is a little less distinct than the lateral. The femoral pores are absent and there is a distinct difference in the character of the scales that precede the anal scales. These are proportionately much larger, while the preanal scales are distinctly smaller than in the type.

In this paratype, there are 34 scale rows around the middle of the body and 27 between the chinshield and the anal opening. The scales of the row bordering the outer of the four median ventral scale rows is distinctly larger than in the type and one might well count six ventral rows instead of four.

The ventral surface of tail and body are immaculate cream; the chin scales have a few black spots. It is possible that adult females may develop more pigment on the venter. On the other hand it is not impossible that a second form is involved. Only larger series can determine this beyond question.

Leposoma bisecta sp. nov.

Type: University of Kansas Natural History Museum, no. 23801, collected on the Pacific slope, $\frac{1}{2}$ mile west of El General, Costa Rica, at an elevation of about 300 meters, Aug. 21, 1947, by Edward H. Taylor.

Diagnosis: A species characterized by a large divided fronto-nasal, narrowed anteriorly; the scales of head strongly striate longitudinally; ventral scales and gular scales all very strongly keeled; four supraoculars; prefrontals short, as wide as long; no postfrontal; four preoculars; a pair of frontoparietals; interparietal larger than parietals. Dorsal scales large, more than three fourths as broad as long, heavily keeled and with a short posterior spine, forming

transverse and oblique rows on back and sides. No trace of a gular collar.

Description of the type: Rostral slightly more than twice as wide as high; frontonasal divided into two elongate scales narrowing anteriorly; a pair of prefrontals nearly as broad as long, in contact with each other for a little more than half their length (due to an injury one is partially fused to frontal); frontal concave laterally, broadly angular anteriorly and posteriorly, one and one third times

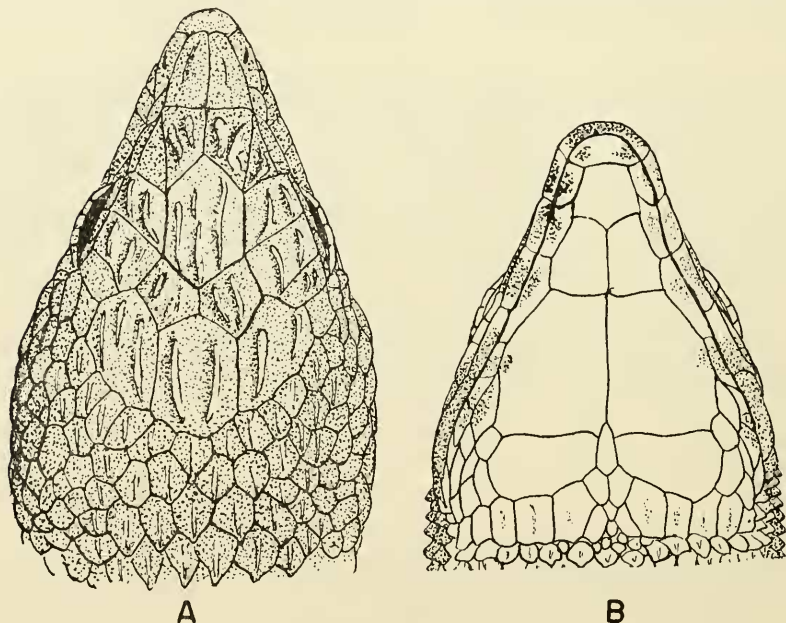


FIG. 2. *Leposoma bisecta* sp. nov. Univ. Kansas Nat. Hist. Mus. no. 23801, Type. El General, Costa Rica. A. Head dorsal view. B. Head ventral view. Actual head width 6.7 mm. (Slightly diagrammatic.)

as long as wide; frontoparietals pentagonal, in contact with each other for half their length; interparietal larger than the parietals and separating them. Scales following the parietals and interparietal not or but little differentiated from other neck scales; four supraoculars. All dorsal head scales with either two, three or four heavy ridges or keels.

Nostril pierced in a large nasal, which has a slight groove above nostril, suggesting a suture; five scales in combined subocular-preocular series, including "loreal"; four superciliaries; two or three small postoculars not distinguished from other temporal scales;

lower eyelid with a transparent disk divided into two parts; seven upper labials in following ascending order of size: 6, 1, 5, 4, 3, 2, 7; five lower labials; a large azygous postmental followed by two pairs of chinshields which are in contact mesially and border the labials either entirely or partially (second pair); a third pair much smaller, separated from the labials by two or three scales, and from each other by a slender elongate scale; each of the third pair followed by three scales, these separated by two or three smaller scales. There follows a row of very small keeled scales that extends to the very large auricular opening. Seven rows of temporal scales; postauricular scales pyramidal or subconical. No trace of a gular collar.

Scales of dorsum large, imbricate, heavily keeled, each terminating posteriorly in a small spine, forming somewhat irregular transverse series and regular oblique series; 26 scales in row about middle of body; 32 scales from occiput to posterior level of thighs; 35 rows from chinshields to preanal pore-scales; four contiguous preanal pore-scales immediately preceding preanal scales. Scales of breast and abdomen arranged in regular transverse series in six longitudinal rows, all keeled strongly, the keel terminating in a spine posteriorly. These scales differ from gular series in having their sides more nearly parallel. Five preanal scales border the vent, arranged as follows, a small median preceded by a larger triangular scale; these two bordered laterally by two elongate widened scales, narrowed at each end; outermost scales small. Femoral pores 7-7, reaching to the continuous preanal pore series of four (2-2).

Limbs pentadactyl, all clawed, inner finger and toe reduced; scales on upper surfaces of arm more or less regular, keeled; those on under surface smaller, some tetrahedral with keels reduced; scales about arm insertion small, more or less tubercular; scales on front and dorsal surface of legs irregular in size, more or less similar in shape; scales on posterior thigh granular with a patch of slightly larger scales; scales in groin, and about leg insertion, smaller.

Tail, regenerated for the most part, somewhat compressed, bearing a more or less distinct lateral groove; scales on regenerated part of tail similar to those of original tail.

Auricular opening very large, nearly equal to eye opening.

Tongue covered with scales; no suggestion of lingual plicae or chevrons.

Color: Dark indefinite brown, the scales with minute black flecks

or punctations; a light, tan, dorsolateral line from middle of neck to some distance on tail, distinct anteriorly, less distinct in middle of body, forming a series of light dots on tail; sides of neck and body darker; head blackish on top and sides; venter light, immaculate, save for a few flecks under tail; regenerated part of tail darker above and below; white spots on upper and lower labials alternate with similar dark areas; a few cream spots on side of neck. Scales or lamellae under feet and toes blackish.

Measurements (in mm.): Snout to vent, 34.5; snout to arm, 13.2; axilla to groin, 17.3; tail (regenerated), 43; arm, 10.2; leg, 13; head width, 6.7; head to auricular opening, 8; head length, 10.

Relationships: I am associating this species with the genus *Leposoma* despite the fact that the frontonasal is paired. On the basis of this character it does not appear to be closely related to other members of the genus.

Remarks: Burt and Burt (1931) give meagre data on two specimens of a *Leposoma* from Suretka, Costa Rica (M. C. Z. nos. 18916-18917), which they refer to the species *Leposoma dispar* Peters. They record certain differences that obtain between the specimens and the type of *dispar*, and it is not impossible that their specimens warrant description under a different name. As far as data is available, the specimens mentioned differ from the type here described as follows:

SPECIMENS SURETKA, COSTA RICA	TYPE SPECIMEN OF <i>L. bisecta</i> EL GENERAL, COSTA RICA
1. Head shields roughened posteriorly. 2. Twenty-seven to twenty-eight scales from occiput to base of tail. 3. Nineteen to twenty scales about middle of body. 4. Thirty to thirty-two scales from chinshields to anals.	1. All head shields with one to three strong keels. 2. Thirty-two scales from occiput to base of tail. 3. Twenty-six scales about middle of body. 4. Thirty-five scales from chinshields to anals.

Apparently they agree in having four supraoculars. They differ, however, in the character of the frontonasal and there may be other unstated differences.

LITERATURE CITED

1931. BURT, CHARLES E., and MAY DANHEIM BURT. South American Lizards in the collection of the American Museum of Natural History. Bull. American Mus. Nat. Hist., vol. 61, 1931, pp. 227-395, figs. 1-15.